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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,037	03/18/2004	Jong Hyun Woo	LT-0058	5590

34610 7590 02/21/2007  
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EXAMINER
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TRAN, MY CHAU T

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/803,037	<b>Applicant(s)</b> WOO, JONG HYUN	
	<b>Examiner</b> MY-CHAU T. TRAN	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23, 25, 26 and 28-31 is/are rejected.
- 7) ☒ Claim(s) 20, 24, 27, 28, and 29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/18/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Application and Claims Status***

1. Claims 1-31 are currently pending and are under consideration in this Office Action.

### ***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority based on two Korean Patent applications, which are Korean Patent Application No(s): 10-2003-34498 filed May 29, 2003 and 10-2003-17603 filed March 20, 2003 (See transmittal paper filed 3/18/2004). It is noted, however, that applicant has not filed a certified copy of these two Korean Patent applications as required by 35 U.S.C. 119(b).

### ***Information Disclosure Statement***

3. The information disclosure statement (IDS) filed on 03/18/2004 has been reviewed, and the references that have been considered are initialed as recorded in PTO-1449 form(s).

### ***Oath/Declaration***

4. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the foreign application, i.e. the first filed foreign application, for patent or inventor's certificate on which priority is claimed pursuant to 37 CFR 1.55, and any foreign application having a filing date before that of the application on which

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priority is claimed, by specifying the application number, country, day, month and year of its filing. Applicant is directed to MPEP 602(III), which states:

*If all foreign applications have been filed within 12 months of the U.S. filing date, applicant is required only to recite the first such foreign application of which priority is claimed, and it should be clear that the foreign application referred to is the first filed foreign application.*

Here, the oath or declaration does not refer to the first filed foreign application, which is Korean Patent Application No(s): 10-2003-17603 filed March 20, 2003 as required. Thus, the oath or declaration filed 03/18/2004 is defective.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-18 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. The limitation of “*PWM converting means for generating a PWM signal of the LCD inverter based on the information received from the control means*” of claim 1 invoke 35 U.S.C. 112, sixth paragraph, i.e. the means (or step)-plus-function claim limitation. See MPEP §2181. The instant specification discloses a PWM converter that generate a PWM signal based on the information from the brightness controller to the inverter (see specification pg. 14, paragraph [53]; fig. 8), and described the structure of the PWM converter (see specification pgs. 14-15, paragraph [56]; fig. 9). However, this limitation is unclear base on the description of the PWM converter of the instant specification such that the PWM converter would performed the instant claimed function,

i.e. *'generating a PWM signal of the LCD inverter based on the information received from the control means'* wherein the claimed device would generate a PWM signal from the inverter base on the information from the claimed controller. Consequently, claim 1 and all its dependent claims are rejected under 35 U.S.C. 112, second paragraph.

Additionally, it is suggested applicant amend this limitation of claim 1 to *'PWM converting means for generating a PWM signal for the LCD inverter based on the information received from the control means'* in order to overcome this rejection.

b. Claim 2 is vague because it is unclear what is being claimed. Claim 2 recites *'the system environment is detected electronic interference in the system environment'*. This limitation is ambiguous because as claimed 1) *"the system environment"* is both a structure, i.e. a device that *'detected electronic interference'*, and a condition of the instant claimed apparatus, and 2) *"the system environment"* is detecting itself.

Accordingly, claim 2 and all its dependent claims are rejected under 35 U.S.C. 112, second paragraph.

c. The limitation of *"wherein the identifying selects one of a plurality of frame frequencies according to a system environment"* of claim 21 is vague because it is unclear what is being claimed. This limitation is ambiguous because as claimed 1) *"the system environment"* is both a structure, i.e. a device that *'detected electronic interference'*, and a condition of the instant claimed apparatus, and 2) *"the system environment"* is detecting itself. Therefore, claim 21 and all its dependent claims are rejected under 35 U.S.C. 112, second paragraph.

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d. Claim 22 recites the method step limitation of “*converting an input voltage received from a power source into a signal having a waveform synchronized to the PWM signal*” is vague and indefinite because claim 19 to which claim 22 depend does not recite the method step of ‘receiving’ an input voltage from a power source, i.e. there is a disconnect between the method steps of claim 19 and the method step of claim 22 for claim 19 recites the method steps of identifying and generating the PWM information base on the frame frequency of the LCD. Thus, claim 22 and all its dependent claims are rejected under 35 U.S.C. 112, second paragraph.

7. Claim 5 recites the limitation “*a video controller*” in line. There is insufficient antecedent basis for this limitation in the claims 1 and/or 2. Neither claims 1 and 2 recite the limitation of ‘*a video controller*’. As a result, there is insufficient antecedent basis for this limitation in the claims 1 and/or 2, and claim 5 and all its dependent claims are rejected under 35 U.S.C. 112, second paragraph.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 17, 18, 19, 25, 26, 30, and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Nuimura (US Patent Application Publication US 2004/0008176 A1).

For *claims 1, 17, 18, 30, and 31*, Nuimura discloses a brightness control device for a LCD (liquid crystal display) used in a notebook computers (see e.g. Abstract; paragraphs: [0004] and [0012]; fig. 1). As illustrated in figure 1, the device comprises a LCD (ref. #2)(refers to instant claimed LCD of claim 17), a fluorescent lamp (ref. #4b)(refers to instant claimed an LCD lamp of claim 17), an inverter (ref. #4a), and a brightness control device (ref. #3)(see e.g. paragraph: [0026]). The brightness control device comprises a control portion (ref. #3a of fig. 1)(refers to instant claimed control means of claim 1 and controller of claim 30) receive the signal regarding ambient light from a sensor and the frequency data from the display device and output a signal to the inverter (see e.g. paragraph: [0027]; fig. 1). The control portion comprises a CPU (ref. #32 of fig. 8)(refers to instant claimed PWM converting means of claim 1 and the PWM converter of claim 30), which generates a PWM signal based on the frequency data from the display device and the ambient light data from the sensor (see e.g. paragraph: [0027]; figs. 1 and 8). The inverter receives the PWM signal from the control portion and produced the driving signal to drive the fluorescent lamp (see e.g. paragraph: [0029]; fig. 1).

For *claims 19, 25, and 26*, Nuimura discloses a method for using the brightness control device (see e.g. paragraphs: [0027] thru [0035]). The method comprises the steps of a) identifying a frame frequency of the LCD, and outputting PWM information based on the identified frame frequency; and b) generating a PWM signal, based on the PWM information and brightness control information for an LCD lamp (see e.g. paragraph: [0027]). The PWM information is transformed in accordance with a predetermined rate for generating a PWM signal

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having a frequency within a predetermined frequency range (refers to instant claim 25) and the brightness control information control the on-time duty of the PWM signal (see e.g. paragraphs: [0027] thru [0028]).

Therefore, the apparatus and method of Nuimura do anticipate the instant claimed invention.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 17, 15, 18, 19, 25, 26, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nuimura (US Patent Application Publication US 2004/0008176 A1) in view of Ichise (US Patent 5,786,801).

For ***claims 1, 17, 18, 30, and 31***, Nuimura discloses a brightness control device for a LCD (liquid crystal display) used in a notebook computers (see e.g. Abstract; paragraphs: [0004] and [0012]; fig. 1). As illustrated in figure 1, the device comprises a LCD (ref. #2)(refers to instant claimed LCD of claim 17), a fluorescent lamp (ref. #4b)(refers to instant claimed an LCD lamp of claim 17), an inverter (ref. #4a), and a brightness control device (ref. #3)(see e.g. paragraph: [0026]). The brightness control device comprises a control portion (ref. #3a of fig. 1)(refers to instant claimed control means of claim 1 and controller of claim 30) receive the signal regarding ambient light from a sensor and the frequency data from the display device and



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output a signal to the inverter (see e.g. paragraph: [0027]; fig. 1). The control portion comprises a memory, and a CPU (ref. #32 of fig. 8)(refers to instant claimed PWM converting means of claim 1 and the PWM converter of claim 30), which generates a PWM signal based on the frequency data from the display device and the ambient light data from the sensor (see e.g. paragraph: [0027]; figs. 1 and 8). The inverter receives the PWM signal from the control portion and produced the driving signal to drive the fluorescent lamp (see e.g. paragraph: [0029]; fig. 1).

For *claims 19, 25, and 26*, Nuimura discloses a method for using the brightness control device (see e.g. paragraphs: [0027] thru [0035]). The method comprises the steps of a) identifying a frame frequency of the LCD, and outputting PWM information based on the identified frame frequency; and b) generating a PWM signal, based on the PWM information and brightness control information for an LCD lamp (see e.g. paragraph: [0027]). The PWM information is transformed in accordance with a predetermined rate for generating a PWM signal having a frequency within a predetermined frequency range (refers to instant claim 25) and the brightness control information control the on-time duty of the PWM signal (see e.g. paragraphs: [0027] thru [0028]).

The teachings of Nuimura differs from the presently claimed invention as follows:

For *claim 15*, Nuimura fail to disclose that the PWM converting means comprises a) a frequency outputting means and b) a comparing means.

However, Ichise teach the limitations that are deficient in Nuimura as follows:

For *claim 15*, Ichise disclose a back light control apparatus for flat display (see e.g. Abstract; col. 1, lines 5-9; col. 3, lines 6-14; col. 5, lines 7-42; fig. 3). The back light control apparatus comprises a memory, a comparator (refers to instant claimed a comparing means), and

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a basic control signal generator (refers to instant claimed a frequency outputting means)(see e.g. col. 3, lines 6-14; col. 5, lines 7-42; fig. 3).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to disclose that the PWM converting means comprises a) a frequency outputting means and b) a comparing means as taught by Ichise in the device of Nuimura. One of ordinary skill in the art would have been motivated to disclose that the PWM converting means comprises a) a frequency outputting means and b) a comparing means in the device of Nuimura for the advantage of providing a comparator to compare current brightness value with predetermined brightness value as suggested by Nuimura (Nuimura: paragraph: [0027]). Furthermore, one of ordinary skill in the art would have a reasonable expectation of success in the combination of Nuimura and Ichise because the type of PWM converting means would be a choice of experimental design and is considered within the purview of the cited prior art.

Therefore, the combine teachings of Nuimura and Ichise do render the apparatus of the instant claims *prima facie* obvious.

### ***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 1, 17, 30, and 31 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4, 5, and 6 of U.S. Patent No. 6,961,044 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the apparatus of claims 1, 17, 30, and 31 and the apparatus of claims 1, 4, 5, and 6 of U.S. Patent No. 6,961,044 B2 have similar structural features. Specifically, the apparatus of U.S. Patent No. 6,961,044 B2 comprises a LCD (refers to instant claimed LCD of claim 17), a backlight lamp (refers to instant claimed an LCD lamp of claim 17), an inverter unit (refers to instant claimed driving means and claim 31) configure to receive the brightness control information signal from the control unit and output driving power for driving a backlight lamp, and a control unit. The control unit includes a microprocessor (refers to instant claimed control means) that receive the brightness adjustment key input signal and output the brightness control information, and a brightness adjustment information outputting unit (refers to instant claimed PWM converting means) that receive the brightness control information from the microprocessor and output the brightness control information signal to the inverter unit. The brightness control information includes voltage level and PWM duty cycle signal. That is the apparatus of the instant application is generic to the apparatus of U.S. Patent No. 6,961,044 B2 or in other word claims 1, 17, 30, and 31 are anticipated by claims 1, 4, 5, and 6 of U.S. Patent No. 6,961,044 B2.

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Accordingly, the examined claims would be obvious over the claims of U.S. Patent No. 6,961,044 B2.

***Allowable Subject Matter***

14. Claims 20, 24, 27, 28, and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter:

A. The instant claim 20 is allowed for the reason that the cited prior arts do not teach or fairly suggest the presently claimed method wherein the identifying step comprises the step of selecting '*one of a plurality of frame frequencies according to a system environment*'.

B. The instant claim 24 is allowed for the reason that the cited prior arts do not teach or fairly suggest the presently claimed method wherein '*the PWM information is a value obtained by multiplying the frame frequency by 4.5, and transforming the resultant value in accordance with a predetermined rate, and wherein the PWM information is outputted in the form of a DC level*'.

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C. The instant claim 27 is allowed for the reason that the cited prior arts do not teach or fairly suggest the presently claimed method wherein the generating step comprises the steps of *'leveling up the PWM information by a predetermined level; outputting a first signal having a frequency corresponding to the leveled PWM information; and comparing the first signal with the brightness control information to output the PWM signal'*.

D. The instant claim 28 is allowed for the reason that the cited prior arts do not teach or fairly suggest the presently claimed method comprises the step of *'varying the frame frequency of the LCD'*.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to MY-CHAU T. TRAN whose telephone number is 571-272-0810. The examiner can normally be reached on Monday: 8:00-2:30; Tuesday-Thursday: 7:30-5:00; Friday: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

My-Chau T. Tran  
February 20, 2007

  
MY-CHAU T. TRAN  
PATENT EXAMINER 2/20/07